

What is claimed is:

1           1.     A light emitting apparatus, comprising:  
2           a light source section comprising a solid-state light  
3 emitting element;  
4           a power supply section that supplies power to the light  
5 source section;  
6           a reflection section that is disposed opposite to a light  
7 extraction surface of the light source section to reflect light  
8 emitted from the light source section; and  
9           a heat radiation section that is disposed with a heat  
10 radiation width in a back direction of the light source section.

1           2.     A light emitting apparatus, comprising:  
2           a light source section comprising a solid-state light  
3 emitting element;  
4           a power supply section that supplies power to the light  
5 source section;  
6           a reflection section that is disposed opposite to a light  
7 extraction surface of the light source section to reflect light  
8 emitted from the light source section;  
9           a heat radiation section that is disposed with a heat  
10 radiation width in a back direction of the light source section;  
11 and  
12           a case in which the reflection section and the radiation  
13 section are placed and which externally radiates heat to be  
14 transferred from the heat radiation section.

1           3. The light emitting apparatus according to claim 2,

2 wherein:

3 the heat radiation section is of the same material as the  
4 case.

1 4. The light emitting apparatus according to claim 1 or  
2 2, wherein:

3 the light source section is packaged such that the  
4 solid-state light emitting element is sealed with a light  
5 transmitting material.

1 5. The light emitting apparatus according to any one of  
2 claims 1 to 4, wherein:

3 the light source section comprises the solid-state light  
4 emitting element that is flip-chip mounted on a inorganic  
5 material board on which a conductive pattern is formed to supply  
6 power to the solid-state light emitting element, and the light  
7 source section is sealed with an inorganic seal material that  
8 has a thermal expansion coefficient nearly equal to that of the  
9 inorganic material board.

1 6. The light emitting apparatus according to claim 5,  
2 wherein:

3 the inorganic seal material is of glass.

1 7. The light emitting apparatus according to claim 5 or  
2 6, wherein:

3 the inorganic material board seals the light emitting  
4 element while bonding in chemical reaction to the inorganic seal  
5 material.

1           8. The light emitting apparatus according to any one of  
2 claims 1 to 7, wherein:

3           the solid-state light emitting element is sealed with the  
4 inorganic seal material with a refractive index of 1.55 or more.

1           9. The light emitting apparatus according to claim 2 or  
2 3, wherein:

3           the case comprises a high reflectivity surface to reflect  
4 the light.

1           10. The light emitting apparatus according to claim 2 or  
2 3, wherein:

3           the case comprises a surface that is subjected to a  
4 finishing to increase its heat radiation area.

1           11. The light emitting apparatus according to any one of  
2 claims 1 to 10, wherein:

3           the heat radiation section comprises a heat radiation  
4 plate that comprises a high reflectivity surface to reflect the  
5 light.

1           12. The light emitting apparatus according to any one of  
2 claims 1 to 11, wherein:

3           the heat radiation section comprises a heat radiation  
4 support that is of a high thermal conductivity material and  
5 transfers to the heat radiation section heat generated from the  
6 light source section, and a heat radiation plate that transfers  
7 the heat through the heat radiation support.

1           13.    A light emitting apparatus, comprising:  
2           a light source section comprising a solid-state light  
3 emitting element;  
4           a power supply section that supplies power to the light  
5 source section;  
6           a reflection section that is disposed opposite to a light  
7 extraction surface of the light source section to reflect light  
8 emitted from the light source section; and  
9           a heat radiation section that is disposed with a heat  
10 radiation width in a back direction of the light source section,  
11 wherein the power supply section is formed with a width  
12 in the back direction of the light source section.

1           14. The light emitting apparatus according to any one of  
2 claims 1 to 13, wherein:

3           the power supply section comprises a metallic thin film  
4 and is disposed with a width in the back direction of the light  
5 source section and is integrated with the heat radiation section  
6 while being insulated from the heat radiation section.

1           15. The light emitting apparatus according to claim 14,  
2 wherein:

3           the power supply section comprises a metallic thin film  
4 and is sandwiched through an insulator between a plurality of  
5 heat radiation plates to compose the heat radiation section.

1           16. The light emitting apparatus according to any one of  
2 claims 1 to 15, wherein:

3 a spectrum light with plurality of region wavelengths is  
4 radiated from the solid-state light emitting element or from  
5 the periphery of the solid-state light emitting element.

1 17. The light emitting apparatus according to claim 16,  
2 wherein:

3 a phosphor is disposed on the periphery of the solid-state  
4 light emitting element.

1 18. The light emitting apparatus according to any one of  
2 claims 1 to 17, wherein:

3 the heat radiation section has the heat radiation width  
4 that is three times or more its thickness.

1 19. The light emitting apparatus according to any one of  
2 claims 1 to 18, wherein:

3 the light source section including the solid-state light  
4 emitting element has a width that is within five times that of  
5 the solid-state light emitting element.

1 20. The light emitting apparatus according to any one of  
2 claims 1 to 18, wherein:

3 the heat radiation section comprises a shape that  
4 protrudes toward a bottom of the reflection surface.

1 21. The light emitting apparatus according to any one of  
2 claims 1 to 20, wherein:

3 the reflection surface opposite to the light source  
4 section comprises a solid angle of  $2\pi$  to  $3.4\pi$  strad.

1           22. The light emitting apparatus according to any one of  
2 claims 1 to 21, wherein:

3           the light source section comprises a light source with  
4 a turn-on power of 1W or more.

1           23. The light emitting apparatus according to any one of  
2 claims 1 to 13, wherein:

3           the reflection section is of a resin material.

1           24. The light emitting apparatus according to any one of  
2 claims 1 to 22, wherein:

3           the light source section comprises a plurality of  
4 solid-state light emitting elements.

1           25. The light emitting apparatus according to any one of  
2 claims 1 to 24, wherein:

3           the light emitting apparatus comprises a plurality of the  
4 light source sections, and a plurality of the reflection sections  
5 and the heat radiation sections corresponding to the plurality  
6 of the light source sections.

1           26. The light emitting apparatus according to claim 25,  
2 wherein:

3           the plurality of the light source sections generate a  
4 plurality of emission colors.

1           27. The light emitting apparatus according to claim 26,  
2 wherein:

3           the plurality of the light source sections generate  
4   emission colors of R, G and B.